REMARKS

Reconsideration of this application in view of the above amendments and following remarks is respectfully requested. Claim 1 has been canceled. Claim 2 has been amended. Support for the amendment can be found, for example, in Figure 2b. Claims 2-27 are currently pending.

Objection to the Drawings:

The Examiner has objected to Figures 1-5 for lack of labels associated with the various blocks. Applicants submit herewith four replacement sheets for Figures 1-5 with the appropriate labels. Support for these labels may be found, for example, on page 3, paragraphs 15 and 16. No new matter has been added by way of these amendments.

Rejection Under Sanderson

Claims 1-3, 15 and 16 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,085,949 to Sanderson. Applicants respectfully traverse this rejection for the reasons set forth below.

In general terms, Applicants' invention is directed to a fuel cell system having a fuel cell housing, a fuel cell stack within the housing, and a detection system. The detection system comprises a monitoring system, a sensor that detects fire or elevated temperature, and a voltage or current source. The sensor, in turn, is located within the fuel cell housing or outside of the housing and juxtaposed to the fuel cell stack.

In contrast, Sanderson is directed to an "alarming and protecting system" that monitors the cooling water supply of a fuel cell system. Sanderson does not disclose or suggest a sensor unit. In fact, Sanderson discourages the use of a temperature sensor because such a sensor "cannot be sufficiently insulated" from the high voltage of the fuel cell (*see*, col. 2, lines 46-54). Rather than using a temperature sensor to directly detect a temperature increase as a result of an abnormality in the cooling water supply, Sanderson's device instead measures the voltage output of the fuel cells and compares it to a reference voltage temperature of the fuel cells. In other words, Sanderson's device is designed on the principle that any temperature increase due to a

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1-5. These sheets, which include Figures 1-5, replace the original sheets including Figures 1-5.

Attachment: 4 Replacement Sheets

cooling water malfunction will result in an increase in the fuel cell's output voltage (*see, e.g.*, Figure 2 and col. 4, lines 10-16). Furthermore, Sanderson does not disclose or suggest a voltage source independent of the fuel cells. As discussed above, Sanderson directly measures the actual output of the fuel cells, and thus does not require a sensor or a voltage/current source to provide the voltage or current for the operation of the sensor. Accordingly, Sanderson fails to teach or suggest each and every element of the present invention. Applicants therefore respectfully request this ground of rejection be withdrawn.

Rejection Under Sanderson In View of Clinton

Claims 4, 7-13 stand rejected under 35 U.S.C. §103(a) as obvious over Sanderson in view of U.S. Patent No. 5,412,374 to Clinton. Again, Applicants respectfully traverse this rejection.

As noted above, Sanderson is directed to an alarm system monitoring the cooling water supply in a fuel cell system. Clinton discloses a generic temperature sensor unit. As discussed above, Sanderson's alarm system does not rely on a temperature sensor unit to directly detect the temperature; indeed, it actively discourages the use of such a temperature sensor unit. Sanderson therefore provides no motivation to one skilled in the art to modify or combine the teachings with that of Clinton. In fact, Sanderson teaches away from this very combination.

Accordingly, Applicants submit that Sanderson, in view of Clinton, does not render the instant invention unpatentable and withdrawal of the rejection is respectfully requested.

Rejection Under Sanderson In View of Macaione

Claims 14 stands rejected under 35 U.S.C. §103(a) as obvious Sanderson in view of U.S. Patent No. 4,930,134 to Macaione. Applicants respectfully traverse.

As noted above, Sanderson fails to teach or suggest a temperature sensor unit. The addition of Macaione does not cure this deficiency. Rather, Macaione is directed to a precision temperature sensor that detects temperature changes in a laser control system. As discussed above, Sanderson's device does not rely on a temperature sensor unit and, indeed,

actively discourages the use of a temperature sensor. Therefore, there is absolutely no motivation to combine these two references in the manner suggested by the Examiner. Applicants respectfully request that this ground of rejection be withdrawn.

Rejection of claim 18-19 and 21 under 35 U.S.C. §103(a)

Claims 18-19 and 21 stand rejected under 35 U.S.C. §103(a) as obvious over Sanderson in view of U.S. Patent No. 6,093,500 to Margiott. Applicants respectfully traverse.

The Examiner concedes that "Sanderson does not disclose switching operation of the fuel cell stack to a secure state (claim 18) and shutting down the fuel cell system if the sensor unit generating an alarm signal". However, the Examiner is of the opinion that Margiott teaches the use of switching operation of a fuel cell stack to a secure state and shutting down a fuel cell system if a sensor unit generates an alarm signal. The Examiner thus concluded that "it would be obvious to one skilled in the art to include switching operation of the fuel cell stack to a secure state and shutting down the fuel cell system if the sensor unit generates an alarm signal to the system of Sanderson". Applicants respectfully disagree.

Margiott is directed to a method of switching a fuel cell stack from a normal state of operation to a second state at a second temperature (see, for example, col. 2, lines 59-63). More specifically, the controlled switch-off in Margiott is intended to protect the fuel cell system during a transition from a normal operation to a different state in which both the temperature and the electrical load are lower than they are in the normal state of operation. Unlike the instant invention, Margiott does not teach or suggest a temperature increase to trigger the switch-off; in fact, the switch-off is associated with a temperature decrease. Moreover, contrary to the Examiner's opinion, no alarm signal is generated prior to the switch-off because the system is operating normally. Accordingly, Margiott fails to remedy the deficiency in Sanderson regarding switching or shutting down the fuel cell system when there is elevated temperature inside the fuel cell housing.

Applicants respectfully submit that claims 18-19 and 21 are not rendered obvious by Sanderson, alone or in combination with Margiott, and withdrawal of the rejection is requested.

Rejection of claims 5-6 under 35 U.S.C. §103(a)

Claims 5-6 stand rejected under 35 U.S.C. §103(a) as obvious over Sanderson in view of Clinton, and further in view of U.S. Patent No. 5,748,429 to Peterson. Applicants respectfully traverse.

As discussed above, Sanderson and Clinton cannot properly be combined in the manner suggested by the Examiner. Because Sanderson actively discourages the use of a temperature sensor unit, one skilled in the art would have no motivation to modify or combine the teaching in Sanderson with that of Clinton, which discloses a temperature sensor unit. Peterson fails to remedy this deficiency in that it merely discloses a particularly kind of impedance that can be used in a temperature sensor unit. Accordingly, Applicants respectfully request that this ground of rejection be withdrawn.

Rejection of claim 17 under 35 U.S.C. §103(a)

Claim 17 stands rejected under 35 U.S.C. §103(a) as obvious over Sanderson in view of Clinton, and further in view of U.S. Patent No. 5,579,736 to Nakamura. Applicants respectfully traverse.

As discussed above, Sanderson and Clinton cannot properly be combined in the manner suggested by the Examiner. Because Sanderson actively discourages the use of a temperature sensor unit, one skilled in the art would have no motivation to modify or combine the teaching in Sanderson with that of Clinton, which discloses a temperature sensor unit. Nakamura fails to remedy this deficiency in that it merely discloses a linear thermal detector utilizing gas expansion for detecting a temperature increase. Accordingly, Applicants respectfully request that this ground of rejection be withdrawn.

Rejection of claim 20 under 35 U.S.C. §103(a)

Claim 20 stands rejected under 35 U.S.C. §103(a) as obvious over Sanderson in view of Margiott, and further in view of U.S. Patent No. 6,495,113 to Aoyama. Applicants respectfully traverse.

As noted above, Margiott fails to remedy the lack of disclosure in Sanderson regarding switching or shutting down the fuel cell system when the temperature is elevated to an alarming level inside the fuel cell housing. As discussed below, Aoyama does not cure this deficiency.

Aoyama is directed to reducing carbon monoxide byproduct necessarily contained in the hydrogen gas generated by a reformer in a fuel cell system. To this end, Aoyama discloses a method by which carbon monoxide is selectively oxidized before the hydrogen gas enters the fuel cell stack. Contrary to the Examiner's assertion that "Aoyama teaches the use of switching comprising disrupting or pausing a supply of medium containing hydrogen to the stack if the sensor unit generates an alarm", Aoyama does not disclose disrupting or pausing the hydrogen supply to the stack when the temperature inside the fuel cell housing increases to a pre-determined level. Instead, it is the supply of the oxidation gas that is stopped (*see, for example*, col. 16, lines 23-24). Moreover, neither the hydrogen gas supply nor the fuel cell system stops operating during a temperature increase. In fact, Aoyama stresses that the system is in a "steady normal operation" when the oxidation gas is stopped (see, for example, col. 16, lines 56-60).

Accordingly, Applicants respectfully submit that Aoyama does not cure the deficiency in Sanderson and/or Margiott, and withdrawal of the rejection of claim 20 is therefore respectfully requested.

Rejection of claims 22-27 under 35 U.S.C. §103(a)

Claims 22-27 stand rejected under 35 U.S.C. §103(a) as obvious over Sanderson in view of Margiott, and further in view of Clinton. Applicants respectfully traverse.

Claims 22-27 recite methods of detecting fire or elevated temperature inside a fuel cell housing using a sensor unit. As discussed above, Margiott fails to remedy the lack of disclosure in Sanderson regarding switching or shutting down the fuel cell system when there is elevated temperature inside the fuel cell housing because Margiott's device is limited to shutting down a fuel cell stack during its normal operation. As further discussed above, Sanderson and Clinton cannot properly be combined since Sanderson teaches away from the combination. One skilled in the art, having knowledge of the Sanderson's device which requires no temperature

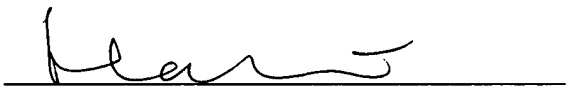
sensor, would have no motivation to employ any particular temperature sensor, which is the subject of claims 22-27. Accordingly, Applicants respectfully submit that Sanderson, Margiott and/or Clinton, alone or in any combination, do not render claims 22-27 unpatentable. Withdrawal of this ground of rejection is respectfully requested.

A good faith effort has been made to place this application in condition for allowance. However, should any further issue requires attention prior tot allowance, the Examiner is requested to contact the undersigned at (206) 622-4900 to resolve the same.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC



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KRH/lk

Enclosures: 4 Replacement Sheets (Figures 1-5)

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